DOCUMENT RESUME

ED 238 340 HE 016 868

AUTHOR Clark, Sheldon B.
TITLE Relationships among State Appropriations, Tuition and Fees, and Enrollment: Paying the Price for Paying the Bills?
PUB DATE 17 Nov 83
NOTE 12p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (12th, Nashville, TN, November 17, 1983).
PUB TYPE Statistical Data (110) -- Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Budgets; Comparative Analysis; *Enrollment Trends; Fees; Graduate Students; Higher Education; *In State Students; *Out of State Students; *Resource Allocation; *State Aid; *Tuition; Undergraduate Students
IDENTIFIERS Peer Institutions; United States (South)

ABSTRACT

The relationships among state appropriations to colleges, tuition and fees, and enrollment were studied at comparable institutions in 15 southern states. The 1982-1983 tuition and fees structures were assessed for institutions belonging to the Southern University Group. Changes in enrollment and tuition at both the graduate and undergraduate levels during the 5-year period from 1978-1979 through 1982-1983 were also evaluated, and comparisons were made using percentages and rank-orderings of percent changes. Findings include the following: for both graduate and undergraduate students, large increases in out-of-state tuition tended to be associated with large decreases in out-of-state enrollment; in-state enrollment was less sensitive to changes in tuition than was out-of-state enrollment; large increases (or decreases) in in-state enrollment was not systematically paired with large increases (or decreases) in out-of-state enrollment. Data are included on 1982-1983 academic year tuitions for resident/nonresident undergraduate, graduate, and law students, along with changes in in-state and out-of-state undergraduate and graduate tuition and enrollment for 1978-1979 and 1982-1983. Data on nonresident surcharges in dollars and as a percentage of the applicable resident fee are also provided. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED238340

Relationships Among State Appropriations, Tuition and Fees, and Enrollment: Paying the Price for Paying the Bills?

Sheldon B. Clark

University Planning and Institutional Research
204 Lyceum
University of Mississippi
University, Mississippi 38677

Paper Prepared for Presentation at the Twelfth Annual Meeting of the Mid-South Educational Research Association, Nashville, TN, November 17, 1983.

NIE 0168D

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Sheldon B. Clark

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Relationships Among State Appropriations, Tuition and Fees, and Enrollment: Paying the Price for Paying the Bills?

Although the factors which affect the tuition and fees structure of institutions of higher education differ from one institution to another, quantifiable commonalities do exist. One such factor is the amount of money appropriated for operating expenses from state tax funds. Increases or decreases in enrollment is another. A third is the amount of tuition surcharge levied on non-resident students. The first two factors are beyond the direct control of decision-makers at the institution level; the third may or may not be, depending on policies at the state level.

Those who are charged with making recommendations about fee structures commonly do so under conditions of limited information (lack of knowledge about what changes in fees are planned by other institutions) and limited flexibility (due to demands imposed by funds appropriated). Since it is reasonable to assume that changes in fees structures affect enrollment, to the extent that such changes make one's own institution more- or less- fiscally attractive than similar institutions, an examination of the historical relationships among the three factors at "competing" institutions seems reasonable. Through the cooperation of the institutions which comprise the Southern University Group (SUG),[1] the Bureau of University Planning and Institutional Research gathered data pertinent to an examination of the relationships among these three factors at comparable institutions.

---

[1]Including institutions in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Appropriations and Tuition

Each year the National Association of State Universities and Land-Grant Colleges (NASULGC) publishes a report which contains information about monies disbursed to individual institutions from state tax funds for operating expenses (funds for capital outlay and those derived from federal, local, and private sources are excluded). According to these annual reports:

- Across the nation, appropriations at the state level have increased an average of 17% during the academic years 1980-81 through 1982-83.
- During the same three-year period, nine institutions which belong to SUG were located among the twelve states having increases in appropriations in excess of 25% (those in Florida, Louisiana, Oklahoma, and Texas), while five were located among the thirteen states with increases of less than 10% (those in Alabama, Arkansas, and South Carolina).
- The median increase in state tax fund appropriations for SUG institutions during the five-year period, FY78-FY82 was 48%.

Not surprisingly, there is a moderate-to-strong negative relationship between changes in appropriations and changes in tuition and fees; that is, large increases in tuition tend to be associated with small increases in appropriations. A comparison of these changes among SUG institutions over the past five years

(1978-1979 and 1982-1983) for each classification of students (i.e., resident and non-resident undergraduate, graduate, and law), reveals that the strongest inverse relationship exists between the change in appropriations and resident graduate tuition ($r = -.72$, $p < .01$), followed by that for resident undergraduates ($r = -.61$, $p < .01$), resident law students, ($r = -.55$, $p < .01$), non-resident undergraduates ($r = -.52$, $p < .01$), non-resident law students ($r = -.51$, $p < .01$), and non-resident graduates ($r = -.32$, $p > .10$), respectively. This suggests that, historically, resident tuition has been more affected by changes in appropriations than has non-resident tuition, and that one of the best indicators of trends in the tuition structures of SUG institutions has been the change in appropriations of state tax funds.

Tuition and Enrollment

The 1982-83 tuition and fees structures for SUG institutions are contained in Table 1. Tables 2 and 3 summarize the changes in enrollment and tuition at both the graduate and undergraduate levels during the five-year period 1978-79 through 1982-83. Because of the wide variation in total enrollment and tuition among the twenty institutions included, the most meaningful comparisons can be made using the "Percent" columns, rather than the "Number/Amount" columns. To further aid comparisons, percent changes are rank-ordered from the largest positive increase to the largest negative decrease.

Further analyses of these data reveal the following:

- A moderate-to-strong negative relationship exists between changes in enrollment and changes in tuition at both the graduate and undergraduate levels for out-of-state students ($r = -.51$, $p < .05$, and $r = -.57$, $p < .05$, respectively): that is, large increases in out-of-state tuition tend to be associated with large decreases in out-of-state enrollment.
- This relationship is less consequential for in-state students ($r = -.35$, $p > .05$ for undergraduates, and $r = -.41$, $p > .05$ for graduates), indicating, perhaps, that in-state enrollment is less sensitive to changes in tuition than is out-of-state enrollment.
- There is no relationship between changes in in-state and out-of-state enrollment at either the graduate or undergraduate level ($r = .01$, $p > .05$, and $r = .08$, $p > .05$, respectively): large increases (or decreases) in in-state enrollment are not systematically paired with large increases (or decreases) in out-of-state enrollment.
- There is no apparent association between changes in in-state graduate and undergraduate enrollments ($r = .36$, $p > .05$), nor between those of out-of-state graduates and undergraduates ($r = .17$, $p > .05$).

Tables 4 and 5 contain comparisons of resident and non-resident tuition among SUG institutions over the past five years. Table 4

quantifies the non-resident surcharge in dollars, while Table 5 quantifies it as a percentage of the applicable resident fee. The large variation in the surcharge imposed upon non-resident students across the institutions under study is noteworthy. The median surcharge for undergraduate non-residents in the 27 SUG institutions, 269%, compares to the median surcharge of 285% for the Southeast, which NASULGC reported. Other median regional surcharges reported by NASULGC were 290% for the Northeast, 235% for the Middle Atlantic, 269% for the Midwest, and 311% for the West.

Conclusion

Analyses like the foregoing may serve to provide decision-makers with empirical evidence which, coupled with their own knowledge of the factors peculiar to their own institutions, can lead to sounder recommendations about the adjustment of tuition structures. Although it is not presumed that such relationships are immutable and eminently predictable, a knowledge of the nature of the historical relationships among appropriations, enrollment, and tuition at comparable institutions cannot help but make the decision-makers' task a more rational one.

Table 1

TUITION COMPARISONS FOR S.U.G. INSTITUTIONS[1]

1982-1983 ACADEMIC YEAR

	Undergraduate		Graduate		Law	
	Resident rank	Non-Resident rank	Resident rank	Non-Resident rank	Resident rank	Non-Resident rank
	$1074 9	$2289 15	$1074 9	$2289 13	$1495 3	$2710 8
	1245 3	2445 11	1314 4	2583 8	--	--
	990 11	2280 16	990 14	2280 14	--	--
	780 19	1920 22	780 18	1920 19	780 14	1920 16
	841 15.5	2401 12.5	994 12.5	2722 5.5	958 11.5	2686 9.5
	841 15.5	2401 12.5	994 12.5	2722 5.5	958 11.5	2686 9.5
	1107 8	2817 4	1107 8	2817 3	1317 6	3447 3
	915 12	2940 3	744 19	2364 12	1140 9	3300 4
	846 14	2470 9.5	928 15	2714 7	1270 7	3144 5
	798 18	2128 17	798 17	1698 21	1200 8	2530 13
	1185 5	3303 1	1708 1	3028 2	2285 1	4099 2
	1167 6	2093 18	1167 6	2093 15	1467 4	2393 14
	1132 7	2058 19	1132 7	2058 16	--	--
	1040 10	1966 20	1040 11	1966 17	--	--
	702 20	2526 6.5	698 20	2522 10	729 15	2553 12
	682 22	2506 8	682 21	2506 11	--	--
	610 23	1839 23	613 23	1883 20	661 16	1931 15
	694 21	1923 21	680 22	1950 18	--	--
	1190 4	2470 9.5	1190 5	1190 27	1390 5	2770 7
	867 13	2628 5	1047 10	2808 4	1068 10	2828 6
	452 26	1532 26	396 27	1256 26	432 18	1440 18
	486 24	1566 24	535 24	1615 22	--	--
	455 25	1535 25	455 25	1535 24	455 17	1535 17
	412 27	1380 27	412 26	1380 25	412 19	1380 19
	1350 1	3276 2	1350 3	3276 1	2066 2	4566 1
	1281 2	2526 6.5	1422 2	1557 23	--	--
	840 17	2360 14	900 16	2560 9	900 13	2560 11
Mean	$ 888	$2281	$ 931	$2196	$1104	$2657
Sigma	271	492	323	564	508	836

[1]Including institutions in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Table 2

Changes in In-State and Out-of-State Undergraduate Tuition and Enrollment for Selected Institutions from the Southern University Group* 1978-79 versus 1982-83**

IN-STATE				OUT-OF-STATE			
Change in Enrollment		Change in Tuition		Change in Enrollment		Change in Tuition	
Number	Percent rank	Amount	Percent rank	Number	Percent rank	Amount	Percent rank
878	6.8% 6	$390	65.0% 5	-267	-8.5% 17	$1080	90.0% 1
2323	9.8 3	99	13.3 18.5	125	8.8 9	354	17.3 16.5
170	1.1 13	99	13.3 18.5	59	5.4 11	354	17.3 16.5
1769	12.5 2	399	56.4 9	31	1.5 15	1158	69.8 3
1005	6.6 7	296	53.8 10.5	-357	-17.1 19	970	64.7 4
955	5.2 11	244	44.0 13	744	30.7 3	644	43.4 9
-1158	-4.8 18	395	50.0 12	1300	24.0 6	923	38.8 12
-131	-2.3 16	460	65.1 4	113	5.3 12	586	38.9 11
468	5.5 10	459	68.2 3	330	34.3 1	585	39.7 10
1229	17.0 1	364	53.8 10.5	38	4.8 13	490	33.2 13
723	6.0 9	173	32.7 14	82	4.3 14	287	12.8 19
1174	9.4 4.5	124	22.2 16	214	14.8 8	236	10.4 20
806	6.2 8	61	11.1 20	772	33.8 2	360	24.3 15
-29	-0.2 14	135	24.2 15	491	24.9 5	434	29.1 14
-668	-4.5 17	458	62.6 6	418	15.5 7	778	46.0 8
-1010	-5.1 19	357	70.0 2	-762	-27.8 20	1182	81.7 2
-113	-0.6 15	58	16.4 17	369	29.9 4	166	13.7 18
638	9.4 4.5	501	59.0 8	-83	-2.2 16	1252	61.9 6
-1267	-8.2 20	489	61.7 7	-681	-14.4 18	969	62.2 5
137	1.6 12	381	83.0 1	385	6.4 10	881	59.6 7
Mean 395	3.6%	$297	46.3%	166	8.7%	$684	42.7%
Sigma 954	6.6	157	22.4	483	17.6	347	23.8

*Includes institutions in Alabama, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.
**Using 1978-79 as the base year.

Table 3

Changes in In-State and Out-of-State Graduate Tuition and Enrollment for Selected Institutions from the Southern University Group* 1978-79 versus 1982-83**

IN-STATE				OUT-OF-STATE			
Change in Enrollment		Change in Tuition		Change in Enrollment		Change in Tuition	
Number	Percent (rank)	Amount	Percent (rank)	Number	Percent (rank)	Amount	Percent (rank)
-87	-7.4% (10)	$390	65.0% (6)	-228	-28.2% (19)	$1680	280.0% (1)
375	7.5 (5)	133	15.4 (16.5)	296	29.9 (3)	421	18.3 (15.5)
-131	-4.1 (7)	133	15.4 (16.5)	-106	-18.8 (10)	421	18.3 (15.5)
369	9.5 (3)	399	56.4 (8)	205	12.6 (7)	1158	69.8 (4)
-353	-9.8 (13)	308	49.7 (10)	33	2.7 (12)	1144	69.6 (5)
67	2.2 (6)	244	44.0 (12)	331	26.9 (4)	644	61.1 (8)
-266	-5.7 (9)	488	40.0 (13)	265	9.5 (9)	728	31.7 (12)
-162	-12.5 (16.5)	460	65.1 (5)	-63	-12.8 (17)	586	38.9 (10)
-55	-4.6 (8)	459	68.2 (3)	41	7.7 (10)	585	39.7 (9)
-167	-12.5 (16.5)	364	53.8 (9)	3	0.9 (14)	490	33.2 (11)
661	17.6 (1)	173	33.0 (14)	250	10.0 (8)	287	12.8 (18)
-878	-30.6 (20)	124	22.2 (16)	19	4.1 (11)	236	10.4 (19)
-338	-10.0 (14)	65	11.9 (20)	-75	-6.5 (15)	375	24.9 (14)
292	14.0 (2)	128	23.2 (15)	142	13.3 (6)	438	29.0 (13)
-749	-13.6 (18)	458	62.6 (7)	640	62.0 (2)	-502	29.7 (20)
-472	-9.2 (11)	507	93.9 (1)	-475	-29.9 (20)	1332	90.2 (2)
482	8.9 (4)	58	16.4 (17)	180	26.2 (5)	166	13.7 (17)
-326	-9.6 (12)	441	48.5 (11)	38	1.7 (13)	1252	61.9 (7)
-454	-25.9 (19)	570	66.9 (4)	825	81.5 (1)	705	82.7 (3)
-472	-11.1 (15)	411	84.0 (2)	-107	-6.9 (16)	1031	67.4 (6)
Mean -133	-5.3%	$316	46.8%	111	9.3%	$657	51.2%
Sigma 408	12.3	166	24.1	289	27.1	494	61.3

*Includes institutions in Alabama, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.
**Using 1978-79 as the base year.

Table 4

DIFFERENCE BETWEEN RESIDENT AND NON-RESIDENT TUITION
S.U.G. INSTITUTIONS[1]
1979 Versus 1983

	Undergraduate		Graduate		Law	
	1979 rank	1983 rank	1979 rank	1983 rank	1979 rank	1983 rank
	$ 821[20]	$1215[18]	$ 821[19]	$1215[16]	$ 821[16]	$1215[14]
	630[25.5]	1200[19]	675[23]	1269[15]	--	--
	600[27]	1290[13]	0[26.5]	1290[12]	--	--
	630[25.5]	1140[20]	630[24]	1140[17]	630[18]	1140[15]
	1305 [4.5]	1560 [9.5]	1440 [3.5]	1728 [6.5]	1440 [3.5]	1728 [8.5]
	1305 [4.5]	1560 [9.5]	1440 [3.5]	1728 [6.5]	1440 [3.5]	1728 [8.5]
	951[13]	1710 [7]	951[14]	1710 [8]	951[13]	2130 [3]
	1125 [7]	2025 [2]	900[16]	1620[10]	--	2160 [2]
	950[14]	1624 [8]	980[10]	1786 [4]	1050 [7]	1874 [4]
	930[17]	1330[12]	500[25]	900[24]	1030 [9]	1330[12]
	1590 [3]	2118 [1]	1080 [6.5]	1320[11]	1275 [5]	1814 [6]
	800[22]	926[26]	800[21]	926[22]	800[17]	926[19]
	800[22]	926[26]	800[21]	926[22]	--	--
	800[22]	926[26]	800[21]	926[22]	--	--
	1710 [2]	1824 [4.5]	1710 [2]	1824 [2.5]	1710 [1]	1824 [5]
	1712 [1]	1824 [4.5]	1712 [1]	1824 [2.5]	--	--
	930[17]	1229[16.5]	960[12]	1270[13.5]	960[11.5]	1270[13]
	930[17]	1229[16.5]	960[12]	1270[13.5]	--	--
	960[12]	1280[14]	960[12]	0[27]	960[11.5]	1380[11]
	936[15]	1761 [6]	936[15]	1761 [5]	936[14]	1760 [7]
	1080 [9]	1080[22]	860[17.5]	860[25]	1007[10]	1008[17]
	1080 [9]	1080[22]	1077 [8]	1080[18.5]	--	--
	1080 [9]	1080[22]	1080 [6.5]	1080[18.5]	1080 [6]	1080[16]
	860[19]	968[24]	860[17.5]	968[20]	860[15]	968[18]
	1175 [6]	1926 [3]	1115 [5]	1926 [1]	1550 [2]	2500 [1]
	765[24]	1245[15]	0[26.5]	135[26]	--	--
	1020[11]	1520[11]	1040 [9]	1660 [9]	1040 [8]	1660[10]
Mean	$1018	$1392	$ 929	$1265	$1086	$1552
Sigma	297	357	392	488	286	451

[1]Including institutions in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Table 5

SURCHARGE[1] COMPARISONS FOR S.U.G. INSTITUTIONS[2]
1979 Versus 1983

Undergraduate				Graduate				Law			
1979	rank	1983	rank	1979	rank	1983	rank	1979	rank	1983	rank
214%	23	213%	21	214%	21	213%	19.5	182%	18	181%	17
198	26	196	24	198	23	197	21	--		--	
200	25	230	20	100	26.5	230	18	--		--	
237	18	246	18	237	15	246	16	237	11	246	13
276	11.5	285	11.5	267	12.5	274	12.5	275	6.5	230	8.5
276	11.5	285	11.5	267	12.5	274	12.5	275	6.5	280	8.5
234	19	254	17	234	16	254	15	226	14	262	11
297	9	321	7	295	8	318	5	--		289	6
273	13	292	10	258	14	292	9	250	10	248	12
268	15	267	16	190	24	213	19.5	224	15	211	15
301	8	279	14	189	25	177	25	197	16	179	18
213	24	179	27	213	22	179	24	188	17	163	19
219	21	182	26	219	19	182	23	--		--	
218	22	189	25	218	20	189	22	--		--	
423	1	360	2	426	1	361	2	407	1	350	1
407	2	367	1	407	2	367	1	--		--	
269	14	301	9	275	9	307	7	264	9	292	5
266	16	277	15	274	10	287	10	--		--	
231	20	208	22	231	17	100	27	231	13	199	16
284	10	303	8	273	11	268	14	273	8	265	10
360	4	339	3	339	5	317	6	344	3	333	4
344	5	322	6	319	6	301	8	--		--	
375	3	337	4	375	3	337	3	375	2	337	2
343	6	335	5	343	4	335	4	343	4	335	3
238	17	243	19	223	18	243	17	235	12	221	14
197	27	197	23	100	26.5	109	26	--		--	
322	7	281	13	313	7	284	11	313	5	284	7
Mean		277%		270%		259%		254%		269%	261%
Sigma		64		57		78		70		65	57

[1] The percentage differential for non-resident students over resident students.

[2] Including institutions in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.